°FORM PTO-1390 (REV 11-2000) U S DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. § 371

ATTORNEY'S DOCKET NUMBER	
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U S APPLICATION NO (If known, see 37 CFR 1 5)	09/763160

INTERNATIONAL APPLICATION NO	INTERNATIONAL FILING DATE	PRIORITY DATE CLAIMED
PCT/DE99/02391	2 August 1999	17 August 1998

TITLE OF INVENTION: **METHOD FOR CONTROLLING A SWITCHING SYSTEM**

APPLICANT(S) FOR DO/EO/US: **Wolfgang RENGER**

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information.

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This is an express request to begin national examination procedures (35 U.S C 371(f)) The submission must include items (5), (6), (9) and (21) indicated below
4. ☒ The US has been elected by the expiration of 19 months from the priority date (PCT Article 31)
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. ☒ is attached hereto (required only if not communicated by the International Bureau).
   b. ☒ has been communicated by the International Bureau
   c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ An English language translation of the International Application under PCT Article 19 (35 U S C 371(c)(2))
   a. ☐ is attached hereto
   b. ☐ has been previously submitted under 35 U S C 154(d)(4).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
   a. ☐ are attached hereto (required only if not communicated by the International Bureau)
   b. ☐ have been communicated by the International Bureau.
   c. ☐ have not been made, however, the time limit for making such amendments has NOT expired.
   d. ☒ have not been made and will not be made
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U S C 371(c)(4))
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C371(c)(5))

Items 11. to 16. below concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1 97 and 1 98.
12. ☐ An assignment document for recording A separate cover sheet in compliance with 37 CFR 3.28 and 3 31 is included
13. ☐ A FIRST preliminary amendment.
14. ☐ A SECOND or SUBSEQUENT preliminary amendment
15. ☐ A substitute specification
16. ☐ A change of power of attorney and/or address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter 2 and 35 U.S.C. 1.821 - 1 825
18. ☐ A second copy of the published international application under 35 U S.C. 154(d)(4)
19. ☐ A second copy of the English language translation of the international application under 35 U S C 154(d)(4)
20. ☒ Other items or information: 1 International Search Report 2. IPER 3. Notification of Receipt of Record Copy 4. Notification of Submission or Transmittal of Priority Document 5, Return receipt postcard.

CERTIFICATE OF HAND DELIVERY

I hereby certify that this correspondence is being hand filed with the United States Patent and Trademark Office in Washington, D C on February 16, 2001

LaVerne Whetstone

U.S. APPLICATION NO (if known, see 37 CFR 1.5) 09/763160	INTERNATIONAL APPLICATION NO PCT/DE99/02391	ATTORNEY'S DOCKET NUMBER 449122003100

21. ☒ The following fees are submitted:

BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)):

Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO $1,000.00

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO $860.00

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO $710.00

International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provision of PCT Article 33(1)-(4) $690.00

International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) $100.00

	CALCULATIONS PTO USE ONLY	
ENTER APPROPRIATE BASIC FEE AMOUNT =	$860.00	
Surcharge of **$130.00** for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(e)).	$0	

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	8 - 20 =	0	x $18.00	$0	
Independent claims	1 - 3 =	0	x $80.00	$0	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ $270.00	$270.00	
TOTAL OF ABOVE CALCULATIONS =				$1130.00	
☐ Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by ½.				$0	
SUBTOTAL =				$1130.00	
Processing fee of **$130.00** for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(f)). +				$0	
TOTAL NATIONAL FEE =				$1130.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). **$40.00 per property** +				$0	
TOTAL FEES ENCLOSED =				$1130.00	
				Amount to be refunded:	$
				charged:	$

a. ☒ A check in the amount of $ 1,130.00 to cover the above fees is enclosed.

b. ☒ The Commissioner is hereby authorized to charge any additional fees that may be required, or credit any overpayment to **Deposit Account No. 03-1952**. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

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Description

Method for controlling a switching system

The invention relates to a method for controlling a switching system which has a central control unit and a number of peripheral terminal devices, wherein

- a job message is sent from one of the terminal devices to the control unit,
- switching control actions are performed by the control unit in dependence upon the job message, and
- in case of successful performance of those actions, a corresponding performance message is sent from the control unit to the terminal device.

In modern switching systems of telecommunication networks such as, for example, the EWSX system of the applicant, there are connected to the central control unit --the so-called MP (Main Processor)-- a plurality of peripheral modules on which there is also a processor. The peripheral modules are, for example, terminal devices such as so-called SLMs (Subscriber Line Modules) or, in the case of the EWSX system, so-called LICs (Line Interface Circuits), and serve to link terminal line units and other switching systems. The central control unit coordinates the operation of the terminal devices and manages the services occurring at the exchange.

Various methods and, in particular, protocols can be used for the exchange between the two processor platforms of the central control unit, on the one hand, and the terminal device, on the other. Since reliable exchange of those message is of course very important, the methods and protocols for the exchange of messages must ensure that no messages are lost and that the data records held at the involved processor platforms always agree with one another.

It should be pointed out that the central control unit can communicate with a plurality of terminal devices simultaneously, each message exchange being, in principle, independent. It should be further noted that, in principle, a terminal device is allowed to send a new

job message to the control unit even before all the preceding jobs have been finished by the control unit and concluded with a performance message. Such a job message which was sent from a terminal device to the control unit and is now being processed by the control unit, but for which no performance message has been issued yet, is designated here as being "open".

In commonly used protocols for message exchange within a switching system, there is a known capability for a job dispatched by a terminal device to be canceled at the central control unit as long as the processing of the job is not yet completely finished. In the event of an error in the job processing, the old job is first called back and then started anew with a new job message. But such a callback of a job has the consequence that all actions already initiated, including those that were already brought to a successful intermediate status, have to be canceled again, which involves a considerable avoidable effort.

The problem addressed by the invention is therefore to modify the performance of the message exchange and its processing in such a manner that requested jobs and actions are completely executed, it no longer being necessary to cancel activities already conducted in the event of a termination of the job, e.g., in the event of an error.

Starting from a method for controlling a switching system of the initially described type, this problem is solved according to the invention in that, at the terminal device(s), any open job message for which the associated performance message has not yet arrived after expiration of a specified wait time from the time of its sending is resent to the control unit and, at the control unit, switching control actions based on an arrived job message are skipped if they were already processed by means of earlier job messages and/or are to be omitted on the basis of a preset rule.

The posed problem is solved in a simple manner by this solution, and a clear reduction of effort at the central control unit can be achieved. At the terminal device, an examination as to whether messages are void owing to subsequent job messages can be eliminated, whereby the effort to realize the control of the terminal devices is simplified.

In a preferred embodiment of the invention, when the job message is resent by the terminal device, the wait time for the arrival of the associated performance message starts to run again. The sending of the job message is thereby repeated in a favorable manner until the associated performance message arrives.

In a variant embodiment, at the terminal device the wait time is determined individually according to a preset rule as a function of the type of job message. In a time-saving manner, the repetition cycle of the job message can thereby be adjusted to the expected effort at the central control unit.

It is additionally favorable if at the terminal device the sending of additional job messages is delayed upon exhaustion of a send window which describes a preset maximum number of job messages not answered by a performance message. However, the repeated sending of the open job messages can continue to proceed. In this manner, an overflowing of the control unit with open jobs is avoided.

An especially simple and suitable choice is for the send window to comprise two job messages.

In order that messages coming later at the terminal device not lead to any losses, it is favorable if additional job messages whose sending is delayed owing to the exhaustion of the send window are buffered in a queue.

For a reduction of the message occurrence it is further advantageous if at the control unit an acknowledgement message to the terminal device is omitted in the event of an interruption of the performed actions owing to an error.

The invention will be explained in more detail hereinbelow by means of a nonrestrictive exemplary embodiment which relates to the protection switching of multiplexed sections ("multiplex section protection switching") in an EWSX system, referring to the appended Figures in which:

Fig. 1 shows signaling procedures between a terminal unit and a central control unit of the EWSX system, which proceed in the trouble-free case according to the prior art, and

Fig. 2 shows a signaling procedure according to the invention.

In the case of multiplex section protection switching, additional intrinsically redundant elements ("protecting" elements) are provided and kept in a standby mode for the hardware elements and data objects ("protected elements) used in a communication service. In the event of a disturbance of the "protected" elements, the "protecting" elements can take over the task of the failed elements and thus maintain a substantially trouble-free operation. More-detailed information about protection switching follows from Recommendation ITU-T G.774.03 of the International Telecommunications Union (ITU). As regards the protection switching, a message exchange is initiated between a terminal device and the central control unit. Here the message exchange is begun in principle by the terminal device, since the terminal device is responsible for detecting changes on the line, performs a protection switching if necessary --e.g., in case of a disturbance--, and then exchanges messages about those measures with the central control unit. At the control unit, corresponding actions relating to the control and management of the switching system are executed on the basis of those messages, e.g., an updating of the protection status, a change or updating of the affected data objects, the informing of other programs of the control unit about any changes relating to the availability of the affected service, and, especially, the sending of message acknowledgements to the terminal device.

Fig. 1 shows a schematic illustration of a signaling procedure between a terminal device AE and the central control unit MP. The terminal device AE sends a message mdg to the central control unit MP, which, depending on the message, executes the required actions ak1, ak2, ..., akn and, after processing the requested actions, sends to the terminal device a performance message dfn, designated hereinbelow for short as an acknowledgement. Since in this case the acknowledgement is made in a regular manner, this signaling procedure coincides with the signaling procedure known from the prior art.

Suppose, for example, that from the terminal device AE there is sent to the central control unit MP a message mdg which relates to a change of the protection status of the multiplexed section, namely, for example, a switchover between protected and protecting sections owing to a loss of service. At the control unit MP, the protection statuses of the associated data objects are now changed through the actions ak1 and ak2 and, if necessary, the associated data structures are reconfigured. After waiting for a time interval t1, the control unit performs action akn in which it sends out a notice message (not shown in Fig. 1) to other processes of the EWSX system in order to notify the other applications about the nonavailability of the associated service. After that has been performed successfully, the corresponding acknowledgement dfn is issued.

No form of examination is made at the terminal device as to whether or not certain messages are still meaningful. According to the invention, all open messages, i.e., all messages for which no acknowledgement was sent yet, are each sent to the control unit after expiration of its wait period and, in a favorable manner, is repeated until the corresponding acknowledgement has arrived. At the control unit, the requested actions are performed in a known manner on the basis of a message that arrived from the terminal device, until the processing is completed or an error occurs. In the event of any irregularity, the processing is terminated; the central control unit then waits for the next message from the terminal device. In this manner, error-correction measures at the control unit can be dispensed with.

If, for example, as is shown in Fig. 2, an error occurs in action ak2 --the reason for the error being irrelevant for the invention at this point--, then the control unit MP terminates further processing and no further activities (relating to that message from the terminal device) occur; the acknowledgement to the terminal device is omitted. After a set time tw, the message mdg is repeated by the terminal device AE. The action ak1 was already performed; action ak2 is restarted. If now the other steps t1,akn proceed successfully, an acknowledgement dfn is made to the terminal device.

The maximum allowed number of messages that are sent out from the terminal device and not yet acknowledged by the control unit is advantageously restricted to a "send window". However, before the sending of another message that extends beyond the

allowed number, one of the messages being processed must be acknowledged. The terminal device repeats the still unanswered messages --without any time limitation-- until they are acknowledged. Messages from the terminal device extending beyond the send window are suitably placed in a queue of the terminal device. When an acknowledgement arrives for an open message, that message is removed from the send window; the next message is taken from the queue, sent to the control unit and included in the send window until the arrival of its acknowledgement. In this manner, no messages can be lost.

If simultaneous processing of a plurality of jobs is allowable, job messages can be sent while other jobs are still open, taking into consideration the preset send window. In Fig. 1 that would mean that, between the job message mdg and its acknowledgement dfn, one or --if allowable-- several other job messages relating to other processes are sent from the terminal unit AE. These other messages are not to be confused with repeated messages such as in Fig. 2.

Since the messages from the terminal device can lead to, among other things, both the activation and deactivation of the associated service and since, moreover, a time evaluation of those messages occurs at the control unit, the send window is favorably established as being two messages. Hence up to two messages from the terminal device can be undergoing processing at the control unit. It is thereby guaranteed that, for example, at the control unit during the course of a time interval whose course was started, e.g., to await the arrival of a release message by means of a message from the terminal device and which is not acknowledged until completion or termination, the release message can be sent from the terminal device and leads correctly to an termination of the time interval.

This is illustrated by way of example in Fig. 1a. As in Fig. 1, a message mdg relating to a switchover between protected and protecting sections is sent from the terminal device AE, and the corresponding actions ak1 and ak2 are initiated at the control unit MP. However, service is restored at the terminal device AE during the time interval t1. Accordingly, a second message wdm occurs, which revokes the loss of service. Namely, the time interval is set so as to allow a possible revocation. At the central control unit

MP, both the first message dfn[1] and also its revocation wdm are now each acknowledged with an acknowledgement dfn, df2, respectively. However, if the processing was interrupted as in Fig. 2, both acknowledgements dfn, df2 are omitted. In this case, both messages mdg and wdm are repeated by the terminal unit until the corresponding jobs are correctly executed and acknowledged.

In some circumstances the processing of a message can take quite a long time -- up to several seconds or, in special cases, about a minute. During that time, various error branches can be run through at the control unit, e.g., on the basis of a deficiency of resources, missing or incorrect acknowledgements, etc. The actions that are executed until the termination owing to an error branch are not canceled. Since also no acknowledgement is sent from the control unit, the original message from the terminal device is repeated. At the control unit, already executed actions are skipped or updated; the actions still outstanding are now performed. Which of the actions have already been processed and thus can be omitted is determined by means of a predefined rule. That rule can depend on the particular application and can make allowance for various attributes such as, for example, the protection status (protecting or protected), the operating status (free or blocked) or a processing time. Not until all actions have been completely processed does the control unit send the corresponding acknowledgement to the terminal device.

No evaluation is made at the terminal device as to whether, e.g., in the case of a message status, certain messages have become "obsolete" in the meantime and can thus be discarded. Rather, all message events are buffered and each of them is sent to the control unit after expiration of the wait time, if the associated acknowledgement has not yet arrived.

For reasons of simplicity, the value selected for the wait time tw is a uniform value which is dimensioned according to the expected time for error-free execution of the longest job. In a variant embodiment, the wait time tw can be determined individually at the terminal

[1] *Tr. note: This appears to be incorrect. The first message is mdg, not dfn, as is made clear again in the last sentence of this paragraph.*

device in accordance with a preset rule as a function of the type of job message, thereby enabling the repetition cycle of the job message to be adjusted in a time-saving manner to the expected effort at the central control unit.

Patent claims

1. Method for controlling a switching system which has a central control unit (MP) and a number of peripheral terminal devices, wherein

- a job message (mdg) is sent from one (AE) of the terminal devices to the control unit (MP),
- switching control actions (ak1, ak2, akn) are performed by the control unit in dependence upon the job message, and
- in case of successful performance of those actions, a corresponding performance message (dfn) is sent from the control unit to the terminal device.,

characterized in

that at the terminal device(s) (AE), any open job message (mdg) for which the associated performance message has not yet arrived after expiration of a specified wait time (tw) from the time of its sending is resent to the control unit and,

that at the control unit (MP), actions (ak1) of the switching control based on an arrived job message (mdg) are skipped if they were already processed by means of earlier job messages and/or are to be omitted on the basis of a preset rule.

2. Method according to claim 1,

characterized in

that when the job message is resent by the terminal device, the wait time (tw) for the arrival of the associated performance message starts to run again.

3. Method according to claim 1 or 2,

characterized in

that at the terminal device the wait time (tw) is determined individually according to a preset rule as a function of the type of job message.

4. Method according to any of claims 1 to 3,

characterized in

that at the terminal device the sending of additional job messages is delayed upon exhaustion of a send window which describes a preset maximum number of job messages not answered by a performance message.

5. Method according to claim 4,
characterized in
that the send window comprises two job messages.

6. Method according to claim 4 or 5,
characterized in
that additional job messages whose sending is delayed owing to the exhaustion of the send window are buffered in a queue.

7. Method according to any of claims 1 to 6,
characterized in
that at the control unit an acknowledgement message (dfn) by the control unit to the terminal device is omitted in the event of an interruption of the performed actions owing to an error.

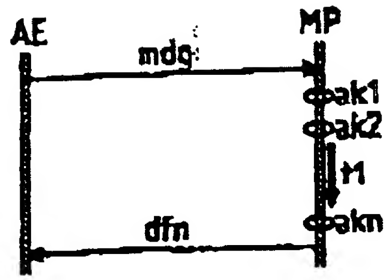

Fig. 1
(prior art)

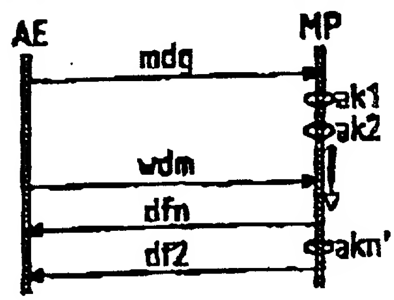

Fig. 1a
(prior art)

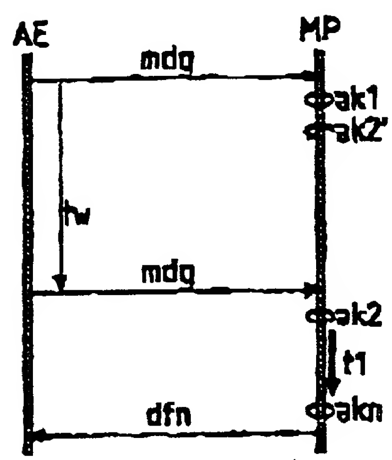

Fig. 2

Declaration and Power of Attorney For Patent Application
Erklärung Für Patentanmeldungen Mit Vollmacht
German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

dass ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

„Verfahren zur Steuerung eines Vermittlungssystems“

deren Beschreibung

(zutreffendes ankreuzen)
☐ hier beigefügt ist.
☐ am 02.08.1999 als
PCT internationale Anmeldung:
PCT Anmeldungsnummer PCT/DE99/02391
eingereicht wurde und am
abgeändert wurde (falls tatsächlich abgeändert).

Ich bestätige hiermit, dass ich den Inhalt der obigen Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

the specification of which

(check one)
☐ is attached hereto.
☐ was filed on _____ as
PCT international application
PCT Application No.
and was amended on
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

German Language Declaration

Prior foreign appplications Priorität beansprucht			Priority Claimed	
198 37 239.6	DE	17.08.1998	☒	☐
(Number) (Nummer)	(Country) (Land)	(Day Month Year Filed) (Tag Monat Jahr eingereicht)	Yes Ja	No Nein
			☐	☐
(Number) (Nummer)	(Country) (Land)	(Day Month Year Filed) (Tag Monat Jahr eingereicht)	Yes Ja	No Nein
			☐	☐
(Number) (Nummer)	(Country) (Land)	(Day Month Year Filed) (Tag Monat Jahr eingereicht)	Yes Ja	No Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozeßordnung der Vereinigten Staaten, Paragraph 122 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35. United States Code. §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §122, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occured between the filing date of the prior application and the national or PCT international filing date of this application.

(Application Serial No.) (Anmeldeseriennummer)	(Filing Date) (Anmeldedatum)	(Status) (patentiert, anhängig, aufgegeben)	(Status) (patented, pending, abandoned)
(Application Serial No.) (Anmeldeseriennummer)	(Filing Date) (Anmeldedatum)	(Status) (patentiert, anhängig, aufgeben)	(Status) (patented, pending, abandoned)

Ich erkläre hiermit, dass alle von mir in der vorliegenden Erklärung gemachten Angaben nach meinem besten Wissen und Gewissen der vollen Wahrheit entsprechen, und dass ich diese eidesstattliche Erklärung in Kenntnis dessen abgebe, dass wissentlich und vorsätzlich falsche Angaben gemäss Paragraph 1001, Absatz 18 der Zivilprozessordnung der Vereinigten Staaten von Amerika mit Geldstrafe belegt und/oder Gefängnis bestraft werden koennen, und dass derartig wissentlich und vorsätzlich falsche Angaben die Gültigkeit der vorliegenden Patentanmeldung oder eines darauf erteilten Patentes gefährden können.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

German Language Declaration

VERTRETUNGSVOLLMACHT: Als benannter Erfinder beauftrage ich hiermit den nachstehend benannten Patentanwalt (oder die nachstehend benannten Patentanwälte) und/oder Patent-Agenten mit der Verfolgung der vorliegenden Patentanmeldung sowie mit der Abwicklung aller damit verbundenen Geschäfte vor dem Patent- und Warenzeichenamt: *(Name und Registrationsnummer anführen)*

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

And I hereby appoint

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(Supply similar information and signature for third and subsequent joint inventors).